REMARKS

[0001] Entry of this Amendment is proper under 37 C.F.R. §1.116 since no issues are raised and

the claim amendments move subject matter of dependent claims 3, 12, 18 and 25 into

independent claims 1, 8, 15 and 21, respectively.

[0002] The following paragraphs are numbered for ease of future reference. Claims 1-2, 4-11,

13-17, 19-24 and 26-27 are all the claims presently pending in this application. Claims 1-2, 7-8,

10, 15-16, 21 and 23 have been amended to more particularly define the claimed invention. .

Claims 3, 12, 18 and 25 have been cancelled without prejudice or disclaimer. Applicant

respectfully traverses the rejections based on the following discussion.

I.   REJECTION UNDER 35 U.S.C. §101

[0003] Claims 1-27 have been rejected under 35 U.S.C. §101 as being directed toward non-

statutory subject matter as not (1) being tied to a particular machine or apparatus, or (2)

transforming a particular article to a different state or thing.

[0004] Applicant's amendment satisfies the two corollaries of the "**machine-or-**

transformation" test of *In re Bilsky*, since the amendment: 1) is not merely field-of-use

limitation by imposing meaningful limits on the method claim's scope; and 2) does not merely

add insignificant extra-solution activity by reciting a specific machine or a particular

transformation of a specific article in an insignificant step, such a data gathering or outputting.

See *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008).

[0005] Specifically, the claimed invention recites, for example:

"*allocating, by a computing device,...,*"

"*optimizing, by said computing device*,…,"

"*determining, by said computing device*,…," and

"*outputting, by said computing device*,…,"

wherein the claimed method is tied to a particular machine or apparatus, namely, "*a computing device*." Applicant respectfully traverses the Examiner's allegation that, "the phrase "computer-implemented" or the limitations of "outputting ... " are token or nominal recitations of structure." Applicant respectfully maintains that "a computing device" is NOT a token or nominal recitation of structure.

[0006] Additionally, the Examiner has rejected claims 21-27 under 35 U.S.C. §101 as being directed toward non-statutory subject matter. Applicant's independent claim 21 recites, "*A program storage device readable by machine, tangibly embodying a program of instructions executable by the machine to perform a method of allocating resources to a hierarchy of prioritized demands in a linear programming production planning system for determining a production plan*," thereby fulfilling the *In re Lowery* requirement. "When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare *In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994)(discussing patentable weight of data structure limitations in the context of a statutory claim to a data structure stored on a computer readable medium that increases computer efficiency). M.P.E.P. § 2106.01 Computer-Related Nonstatutory Subject Matter. In view of the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

II.   OBJECTION TO THE CLAIMS

[0007] Claim 1 is objected to due to informalities and Applicant has amended the claims in a

manner believed fully responsive to all points raised by the Examiner. Specifically, the term,

"*demand priorities*," has been replaced with, "*prioritized demands*." See Applicant's

Specification at paragraph [0003] for support for this amendment. In view of the foregoing, the

Examiner is respectfully requested to reconsider and withdraw this rejection.

III.   REJECTION UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

[0008] Claims 3, 10, 16 and 23 are rejected under 35 U.S.C. §112, second paragraph, as being

indefinite. Claims 3, 10, 16 and 23 have been amended in a manner believed fully responsive to

all points raised by the Examiner. More specifically, claims 3, 10, 16 and 23 have amended to

overcome the Examiner's rejection, specifically, to remove each occurrence of the term "*full*",

and amend the phrase, "*wherein each different linear programming model uses as a starting*

point a program solution of the previous linear programming model," accordingly. In view of

the foregoing, the Examiner is respectfully requested to reconsider and withdraw this rejection.

IV.   THE PRIOR ART REJECTIONS

A.   The 35 U.S.C. § 103(a) Rejection over Hegde further in view of de Farias

[0009] Claims 1-2, 5-6, 8-9, 15, and 21-22 stand rejected under 35 U.S.C. §103(a) as being

unpatentable over Hegde, et al., U.S. Pat. No. 7197469, (hereinafter "Hegde"), further in view of

de Farias, "The Linear Programming Approach To Approximate Dynamic Programming: Theory

And Application", (hereinafter "de Farias").

[0010] The Examiner alleges that one of ordinary skill in the art would have been motivated to modify Hegde with the teaching from de Farias to form the invention of claims 1-2, 5-6, 8-9, 15, and 21-22. Applicant submits, however that these references would not have been combined and even if combined, the combination would not teach or suggest each element of the claimed invention.

[0011] Applicant traverses the Examiner's rejection since, among other reasons, Hegde is directed toward dividing each of a priority ranked scheduled releases (Material Requirements Planning (MRP)) into "N" separate and smaller sized scheduled releases where the priority of each of the "N" releases may be equal to the priority of the original release. The "N" separate and smaller sized scheduled releases are sorted according to priority and then used to determine an optimal supply schedule for allocating resources including component supply and assembly capacity. The de Farias publication is directed toward applications of approximate linear programming to queuing problems and web server farm management.

[0012] Meanwhile, Applicant's claimed invention is directed toward backorder costs penalties are determined independently for each set of prioritized demands and each successive linear programming model allocates a range of backorder costs within a priority group to which resources are currently being allocated.

[0013] More specifically, Applicant submits, that neither Hegde, nor de Farias, nor any alleged combination thereof, teaches or suggests:

"*wherein backorder costs penalties are determined independently for each set of prioritized demands and each successive linear programming model allocates a range of backorder costs within a priority group to which resources are currently being allocated*,"

according to Applicant's independent claim 1, and

"*wherein during said allocating processes, each linear programming model allocates a range of backorder costs within the priority group to which the resources are currently being allocated*," according to Applicant's independent claim 8, and similarly, independent claims 15 and 21.

[0014] With respect to independent claim 1, (with subject matter from Applicant's former dependent claim 3), the Examiner admits on the bottom of page 13 of the After-Final Office Action that "Hegde does not specifically teach...[Applicant's claimed] backorder costs penalties are determined independently for each set of demand priorities and each successive linear programming model allocates a full range of backorder costs within a priority group to which resources are currently being allocated does."

[0015] The Examiner alleges that "Fakhouri [29,23] states "In such environments, multiple independent decision support systems can co-exist in a cooperative and/or hierarchical manner." .... Fakhouri [38,36] inter alia states "In brief, we obtain an integer solution by solving a linear relaxation of the ILP described above, and then heuristically converting the optimal factional solution to obtain an integer solution. Having obtained an optimal fractional solution, we convert it into an integer solution in stages, at each stage "fixing" the values of variables that have been rounded in previous stages. We tackle lowerlevel resource before those that depend on them. In every iteration, we identify a few resources and their associated variables. We apply the integrality constraint for those variables to obtain an ILP with a relatively small number of integrality constraints. We solve this ILP, extract the values of the selected variables from the solution, and fix those values for their respective variables for all subsequent iterations. We continue this process till we arrive at a fully integral solution.""

[0016] The Examiner then admits that "[n]either Hegde nor Fakhouri specifically refer to

backorder penalty costs…," but alleges that Leachman discloses, "Cash flows in the objective function include the sales revenue of each finished goods type (forecast demands case), backorder costs for supply that is delivered late (order-board demands case), inventory holding costs for excess bin output, and the incremental cost of producing additional source product."

[0017] However, neither Hegde, Fakhouri nor Leachman discloses Applicant's claimed, "*backorder costs penalties are determined independently for each set of prioritized demands and each successive linear programming model allocates a range of backorder costs within a priority group to which resources are currently being allocated*." Nowhere in the combined references is there any disclosure as to determining backorder cost penalties…*for each set of prioritized demands*. Additionally, nowhere in the combined references is there any disclosure of an allocation of a range of backorder costs within a priority group, wherein that priority group has *resources that are currently being allocated*.

[0018] With respect to independent claims 8, 15 and 21, (with subject matter from Applicant's former dependent claims 12, 18 and 25, respectively), the Examiner admits on the top of page 18 of the After-Final Office Action that "Hegde teaches…[Applicant's claimed] during said allocating processes, each linear programming model allocates the full range of backorder costs within the priority group to which the resources are currently being allocated," at "Hegde [5,2-7] states "As is known, LP used in BCD is formulated as a cost minimization problem where the objective function is comprised of costs for processing, shipping, back ordering, inventory holding, and material substitution, as well as negative revenues, all of which are linear in their respective decision variables.""

[0019] However, Applicant maintains that Hegde fails to teach or suggest Applicant's claimed invention, "*wherein during said allocating processes, each linear programming model allocates*

a range of backorder costs within the priority group to which the resources are currently being

allocated." Nowhere in Hegde is there any disclosure of "*a range of backorder costs within a*

priority group," where that priority group has resources currently being allocated.

[0020] In summary,

[0021] Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this

rejection since the alleged prior art references to Hegde and de Farias (either alone or in

combination) fail to teach or suggest each element and feature of Applicant's claimed invention.

   **B.   The 35 U.S.C. § 103(a) Rejection over Hegde further in view of de Farias,
           Fakhouri and Leachman**

[0022] Claims 4, 7, 10-11, 13-14, 16-17, 19-20, 23-24 and 26-27 stand rejected under 35 U.S.C.

§103(a) as being unpatentable over Hegde, (hereinafter "Hegde"), further in view of de Farias

further in view of Fakhouri, et al., U.S. Pat. No. 746147 and Leachman, et al., "IMPReSS: An

Automated Production-Planning and Delivery-Quotation System at Harris Corporation-

Semiconductor Sector", (hereinafter "de Farias, Fakhouri and Leachman").

[0023] The Examiner alleges that one of ordinary skill in the art would have been motivated to

modify Hegde with the teaching from de Farias, Fakhouri and Leachman to form the invention of

claims 3-4, 7, 10-14, 16-20 and 23-27. Applicant submits, however that these references would

not have been combined and even if combined, the combination would not teach or suggest each

element of the claimed invention.

[0024] However, even assuming *arguendo* that the Examiner's position has some merit, de

Farias, Fakhouri and Leachman fails to teach or suggest, "*wherein backorder costs penalties are*

determined independently for each set of prioritized demands and each successive linear

programming model allocates a range of backorder costs within a priority group to which

resources are currently being allocated," according to Applicant's independent claim 1, and

"*wherein during said allocating processes, each linear programming model allocates a range of*

backorder costs within the priority group to which the resources are currently being allocated,"

according to Applicant's independent claim 8, and similarly, independent claims 15 and 21.

[0025] Therefore, de Farias, Fakhouri and Leachman fail to overcome the deficiencies of Hegde.

[0026] Therefore, Applicant respectfully requests the Examiner to reconsider and withdraw this

rejection since the alleged prior art references to Hegde and de Farias, Fakhouri and Leachman

(either alone or in combination) fail to teach or suggest each element and feature of Applicant's

claimed invention.

V.   FORMAL MATTERS AND CONCLUSION

[0027] In view of the foregoing, Applicant submits that claims 1-27, all of the claims presently

pending in the application, are patentably distinct over the prior art of record and are in condition

for allowance. The Examiner is respectfully requested to pass the above application to issue at

the earliest possible time.

[0028] Should the Examiner find the application to be other than in condition for allowance, the

Examiner is requested to contact the undersigned at the local telephone number listed below to

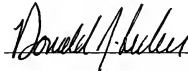discuss any other changes deemed necessary in a telephonic interview.

[0029] The Commissioner is hereby authorized to charge any deficiency in fees or to credit any

overpayment in fees to Assignee's Deposit Account No. 09-0456.

Respectfully Submitted,

Date: August 27, 2009

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